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investigation at Chicago, naturally come in for full consideration, but the past history and the important anatomical features of the Coniferales have not been overlooked. The great influence of modern anatomical and paleobotanical work is nowhere more clearly shown than in the systematic grouping of the Conifers along evolutionary lines. One illustration will serve to make this clear. In the first edition of the present work, which appeared ten years ago, the pine was considered to represent the highest member of the Conifers on account of the complexity of its vegetative and reproductive structures. In the present edition, it is put near the bottom, if not at the very bottom, of the coniferous series, since recent investigations, paleobotanical and anatomical, have demonstrated its great antiquity and at the same time the truth of the general proposition that the Conifers are a reduction series in which the simplest members are most modern and not an ascending one, in which the most complex representatives are the highest.

The Gnetales, which on account of their supposed affinities with the angiosperms are of great botanical interest, are adequately treated. The riddle of their existence is discussed in an entirely unpartisan manner. Following this chapter is one on evolutionary tendencies among the Gymnosperms. This part of the volume is naturally the one about which there is the greatest room for difference of opinion, and it is precisely here that the authors deserve the highest praise. At the present moment the older morphology is in process of resolution under the influence of experimental and paleobotanical activities. For that reason a clear expression of evolutionary sequence, even of groups concerning the past history of which we are well informed, as is relatively true of the Gymnosperms, is extremely difficult. Notwithstanding, in the present volume, we find a remarkably clear position taken, although not entirely unaffected by the back eddies resulting from the partial persistence of the older standpoints.

E. C. JEFFREY

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Pharmaceutical Bacteria, with Special Reference to Disinfection and Sterilization. By ALBERT SCHNEIDER, M.D., Ph.D. Published by P. Blakiston's Son & Co., Philadelphia, Pa. Price \$2.00.

The rapid development of bacteriology in various directions has led to the publication of books in considerable number, showing the application of bacteriology to different phases of modern life. Medical bacteriology, agricultural bacteriology, industrial bacteriology and various other aspects of this new science have been fairly well exploited. The present book is in a new line, and is designed simply to cover the relations of bacteriology to pharmacy—being intended primarily for students in college of pharmacy and incidentally to pharmacists in general. The subjects that are treated in the work are only those which have some practical relation to this business. After a general introduction there is a brief but comprehensive historical survey of the development of bacteriology, divided into periods and bringing the subject up to date. This is followed by a general description and classification of bacteria, with the method of bacteriological technique, and then brief considerations of the relation of the bacteria to a few industries, like agriculture in general, dairying, the extermination of pests, canning, cider-making, etc. A somewhat extended discussion of the problems of immunity and the activities of bacterial products, together with a discussion of the manufacture of sera and vaccines, is naturally given in a book of this nature, the subject being treated from both a theoretical and a practical standpoint. Disinfection and the use of various disinfectants are discussed quite extensively, the subject being considered from the standpoint of the disinfection of water, of food, of dwelling houses, of surgeons' supplies, of various chemicals that are liable to be handled in the pharmacy; in short, all relations of disinfection which have a bearing upon the problems of the pharmacy, are carefully considered. A chapter upon communicable diseases and their prevention treats very briefly of the

better-known bacterial diseases and the most modern preventive methods; and lastly a suggestion is given for the equipment of a moderate sized laboratory for the pharmacy.

The book in general is well written, well illustrated, and will be useful for the people for whom it is particularly designed. As a book on bacteriology for the general student, however, it is too narrow in its scope to be of any great value or interest. As its title indicates, it is a pharmaceutical bacteriology, and its place is simply in schools of pharmacy and in the hands of pharmacists.

H. W. C.

The American Year Book. 1911. Edited by FRANCIS G. WICKWARE, B.A., B.Sc. New York, D. Appleton & Co.

The American Year Book in its second issue presents a carefully collected and compiled record of events and progress, largely with reference to the year 1911. There are here gathered facts of use to writers of many kinds, covering many fields, scientific, somewhat aside from science, like history and politics, and others into which science is to-day entering, like economics and the social questions. Industries and occupations are considered under a number of grouped heads, while the sciences themselves and engineering are ranged in some seven groups. There follow the humanities, an epitome of chronology and necrology and some references to the volume of 1910, which, being the first, reviewed and outlined a number of subjects.

There are two criteria for determining the quality of a volume like this; one its actual fitness for the purpose for which it is intended and the other the list of contributors. The first-named can be reliable only after a season of trial, and the excellences or demerits may not be apparent on cursory inspection. Taking the list of names of the authors of the various essays, they should stand for a superlative product. It was Dr. Walter Wyman who prepared the article on Public Health and Hygiene, the revision after his death being done by Dr. Schereschewsky.

There are here reviewed the world movements of epidemic diseases and the incidence and movements of the same within the United States. The writer does not fail to note in an authoritative way the measures of defense against the threatened invasion of cholera during the year, the unusual prevalence of smallpox, the improvement in the mortality rate of tuberculosis, the story of anti-typhoid vaccination, not forgetting a word of warning against measles and other diseases so common that no one fears them, yet which take large toll. In this connection it is interesting to note that the infant mortality can be given for eight states, only, Michigan being the sole one away from the Atlantic coast in which the registration is sufficiently good.

International statistics for world and country are presented from authoritative sources, government reports, local bulletins and the like. Some of the items are populations, national revenues and expenditures, products like cotton and wool, grains, coal and iron. These will be invaluable to persons needing such data. The international mortality rates given in the first grouping of figures is from an English source, the Registrar General's Annual Summary. It is curious that while taking places of as low rank in point of population as Stockholm and Bucharest, Prague, Trieste and Melbourne, the latter somewhere not far above 100,000, there are omitted such places as Tokio, Buenos Ayres, Liverpool, Warsaw, Manchester, Naples, etc., so that only about one third of the cities above half a million are represented. There must be better sources than that selected if full information is desired.

The third group, the Problems of Population, takes up many matters, one interesting one being the change in the shape of the head noticeable among the children of immigrants. For history there is a résumé of the political parties and their changes, some words on reciprocity and the tariff; conservation is considered and trusts and court decisions affecting corporations, etc. There is a good deal of space devoted to foreign history. Govern-